NEW REMEDIES.

AN ILLUSTRATED MONTHLY TRADE JOURNAL OF

MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

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EDITORIAL.

BE careful, in detaching the advertisement pages from this number, not to separate the title-page and fly-leaf for Vol. VI., which will be found among them.

THOSE of our recent subscribers (and we have the pleasure of acknowledging the acquisition of very many) who have not had the fortune to become familiar with the contents of the earlier portion of the volume, are invited to pay special attention to the index in the closing pages of this number.

No journal published in this country can present so complete a review of the current literature on the subjects embraced. To accomplish this we have been content to leave to our contemporaries all those interesting items relating to physiology, agriculture, astronomy, social science, mechanics, etc., which, however, valuable in themselves, can as well be found in the daily papers and popular magazines, and have confined ourselves, as strictly as possible, to our legitimate field. Compared with the value of the fresh and practical information thus furnished the price of the journal to each subscriber becomes of the most trifling importance—indeed, it fails to cover the actual cost of publication.

The large number of woodcuts of which we have made use, have not only added greatly to the appearance of the journal, but have also enabled us to publish a large amount of practical and interesting matter, which without them would have been unintelligible.

The increasing interest shown by students and others in the competitive analyses of the pharmaceutical drugs and chemicals furnished by us, leads us to continue this feature of our journal. We hope that many who do not compete for the valuable prize offered, may find the information given in this section, of service, in enabling them to detect fraudulent and accidental adulterations of the goods which the nature of their business requires them to keep, and for the purity of which they are morally, if not legally responsible.

Our prices-current have been corrected regularly by a gentleman possessing extraordinary facilities for becoming familiar with the market, and who is entirely independent of any retail or jobbing-house. Those whose interests require a close knowledge of fluctuations in prices, will find the signs ♂ and ♀ a ready means for distinguishing the articles that have changed in value since the previous quotation.

In addition to the usual expenses, we have during the past year added, at considerable cost, a number of full-page illustrations in wood-cutting and lithography, both plain and colored, which are of the very best grade of workmanship obtainable. Indeed, in every respect, short of actually giving away a valuable publication, neither pains nor expense have been spared to make it desirable for every physician and pharmacist to become a subscriber and reader of NEW REMEDIES. As we have before intimated, the result has been an increase in circulation, and expressions of appreciation of the most flattering character.

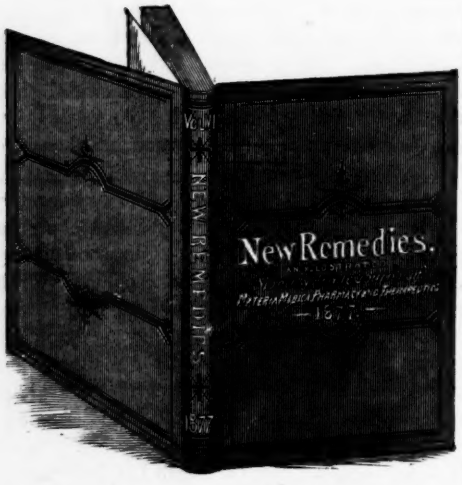
We do not feel called upon to make specific promises in regard to our future course, but our subscribers may be assured that all that can reasonably be expected, *and more*, will be done to *keep the journal in advance of all others of its class*. How well we have fulfilled our promises in regard to the present year, we think there can be no question.

A few words here in relation to our advertisements. It can readily be understood that it is only

through the receipts from this department that we are enabled to present to our readers matter of such scientific and practical value. A reasonable discrimination, however, has been exercised by the publishers, in regard to the character of the matter admitted, and we are confident that our readers will find in the pages devoted to them the notices of the leading and most responsible houses in the country in their respective branches. In order to render the advertisements of greater and more permanent value, we have recently added to each number an index of the articles advertised, and further changes which promise improvement are under consideration.

We have inquiries, about this time in the year, regarding the facilities for binding New Remedies.

The publishers adopted last year a style of cover shown in the adjoining illustration, which is both handsome, serviceable, and reasonable in



price. It is of muslin, with gold lettering and indented ornamentation. It is all ready to be used by the binder, and will be furnished postage paid for 50 cents.

The space required in this number for the index of Vol. VI. has rendered it necessary to abbreviate somewhat the other matter; our usual Bibliographic Notices and list of Recent Trade-Marks, Labels and Patents are, for the same reason, omitted altogether, and an extra leaf has been added to the number.

MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

The Cardamom Plant.

One of the most valuable members of the ginger family (Zingiberaceæ) is *Elettaria Cardamomum* Maton (*Alpinia Cardamomum* Roxb.), a flag-like perennial plant, six to twelve feet high, with large lanceolate leaves on long sheathing stalks, and flowers in lax flexuose horizontal scapes, six to eighteen inches in length, which are thrown out to the number of three or four, close to

Fig. 1.—Elettaria Cardamomum.

the ground (see Fig. 3). The fruit is ovoid, three-sided, plump, and smooth, with a fleshy green pericarp.

The cardamom plant grows abundantly, both wild and under cultivation, in the moist, shady mountain forests of North Canara, Coorg, and Wynaad on the Malabar coast, at an elevation of 2,500 to 5,000 feet above the sea. It is truly wild in Canara and in the Anamalai, Cochin, and Travancore forests. The cardamom region has a mean temperature of 22° C. (72° F.), and a mean rainfall of 121 inches.

A well-marked variety, differing chiefly in the elongated form and large size of its fruits, is found

wild in the forests of the central and southern provinces of Ceylon. It was formerly regarded as a distinct species, under the name of *Elettaria major*, but careful observation of growing specimens has shown that it possesses no characters to warrant it being considered more than a variety of the typical plant, and it is therefore now called *Elettaria Cardamomum*, var. *β*. It is only known to occur in Ceylon, where the ordinary cardamom of Malabar is not found except as a cultivated plant.

FIG. 2.—The Cardamom Flower.

The fruit of the Malabar cardamom, as found in commerce, is an ovoid or oblong, three-sided, three-valved capsule, containing numerous seeds, arranged in three cells. It is rounded at the base and often retains a small stalk; towards the apex it is more or less contracted and terminates in a short beak. The longitudinally-striated, inodorous, tasteless pericarp is of a pale grayish-yellow, or buff, or brown, when fully ripe; of a thin papery consistence, splitting lengthwise into three valves. From the middle of the inner side of each valve a thin partition projects towards the axis, thereby producing three cells, each of which encloses five to seven dark brown, aromatic seeds, arranged in two rows, and attached in the central angle.

The seeds, which are about two lines long, are irregularly angular, transversely rugose, and have a depressed hilum and a deeply-channelled raphe. Each seed is enclosed in a thin, colorless aril.

Cardamoms vary in size, color, and flavor. Those which are shortly ovoid or nearly globular, and $\frac{4}{16}$ ot $\frac{4}{16}$ of an inch in length, are termed in trade language *shorts*, while those of a more elongated form, pointed at each end, and $\frac{7}{16}$ to $\frac{9}{16}$ of an inch long, are called *short-longs*. They are further distinguished by the names of the localities, as *Malabar*, *Madras*, and *Aleppy*. The *Malabar* cardamoms, which are the most esteemed, are of full color, and occur of both forms, namely, *shorts* and *short-longs*. They are brought to Europe via Bombay. The *Madras* are chiefly of an elongated form (*short-longs*), and of a more pallid hue. They are shipped at Madras and Pondicherry. Those termed *Aleppy* are generally *shorts*, plump, beaked, and of a peculiar greenish tint. They are imported from Calicut, and sometimes from Aleppy.

Cardamoms are esteemed in proportion to their plumpness and heaviness, and the sound and mature condition of the seeds which they contain. Good samples afford about three-fourths of their weight of seeds.*

The accompanying figure of the cardamom plant is taken from the work of a practical planter in Mysore, Mr. Elliot,† who gives the following account of its cultivation:

"Some time in February or March the felling party—one-half of them provided with axes, and the rest with large hack-knives for clearing the underwood—proceed to the forest, with the necessary supplies of food, and commence operations by building, near to some stream, a temporary hut to shelter them at night. The next morning the head man of the party, who is necessarily well acquainted with the forest, and who has previously chosen the sites for the projected gardens, points out to the coolies the trees that are to be felled. Half of the party then commence to clear the underwood, while the remainder set to work with their axes and fell the large forest trees. The Coorgs have an idea that it is of great importance that the ground should be well shaken by the fall of some heavy tree, and if from any cause a tree does not crash down with sufficient force they fell another across it. Each plot generally consists of about the tenth part of an acre, and care is taken to leave about twenty to thirty yards of jungle between each garden, as well as not to make too many gardens in one year, lest there should be a too great and sudden diminution of the moisture which is so much required by the cardamom plants. From fifty to one hundred gardens are made annually, until the whole jungle is under cultivation. If presented in a plan, a cardamom jungle fully cultivated would be not unlike a checkered board.

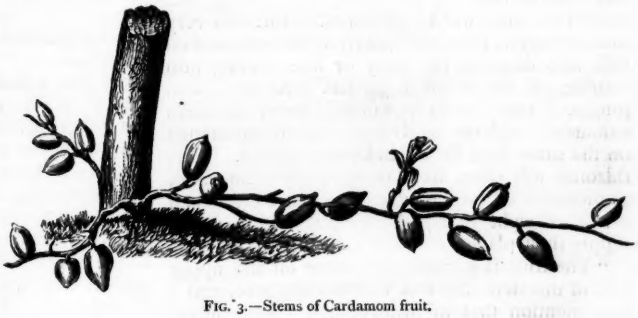


FIG. 3.—Stems of Cardamom fruit.

"In May, during the early rains of the south-west monsoon, the young plants shoot up all over the cleared ground, but especially near to the roots and stem of the fallen trees. By the October following they will have grown three or four inches, and by ensuing February will have attained a height of about one foot, with from eight to ten leaves on each plant. The seeds ripen in Octo-

* This account is taken from Flückiger and Hanbury's *Pharmacographia*, p. 582 sq.

† *Experiences of a Planter in the Jungles of Mysore*, Lond., 1871.

ber, and in the fourth year, or about three years and a half from the springing of the plant, a small crop, called by the Coorgs "God's fruit," will be gathered. At this time each rhizome will have thrown up about eight stems. After the plants have grown to the height of two feet the gardens must be annually weeded. When trees have reached the height of about four feet, or say in the third year, a little culling will be required, for each plant must have six feet of clear ground left around it. In removing superfluous plants, care must be exercised in preserving the strongest and healthiest looking specimens. In the fifth year the plants will give a good crop, and will probably continue to do so for the following seven years, when they will begin to present a sickly and exhausted appearance. It will then be necessary to select some large trees from the surrounding jungle, and fell them right across the sickly plots. This is generally done during the months of February and March, when the lands were originally prepared for cardamoms, but may also be done with great advantage some months earlier. Young plants will then spring up as before, and many of the old plants will have their stems and racemes killed by the fall, but from their rhizomes fresh stems will shoot, and the plants will bear with increased vigor for the next eight years, when the same process of renovation will have to be gone through again. The year in which the forest trees are thus felled the cardamom plots naturally give but little or nothing, and during the ensuing year but a light crop will be gathered. But this very much depends upon the quality of the soil, and on this also depends the early or late coming into bearing of the original garden. A cardamom jungle, if thus carefully worked, never becomes exhausted, and the cultivation may be continued on the same land for an indefinite period. One rhizome will often have over twenty stems, and, as these die off (and they seldom last longer than seven or eight years), fresh ones spring up to supply their place.

"The fruit is occasionally borne on the upper part of the stem, but this is extremely rare, and I may mention that in Munzerabad I have never seen or heard of an instance of this departure from the ordinary habit of the plant. When from the stem four racemes are thrown out it is called by the natives the true or full crop; if three only, three-quarter crop; if two, half crop; and if one only, quarter crop. One raceme will have from eight to fourteen branches, and each branch from three to six pedicels.

"When the plant is grown under the most favorable conditions these branches are grown close together; when, however, the conditions are unfavorable, the racemes are long and weak, and the branches far apart."

Removal of the Odor of Petroleum.

Mr. E. Masson removes the disagreeable odor of petroleum in the following manner: 100 kilos of petroleum are placed into a suitable vessel, and by means of a long-necked funnel 60 grammes each of concentrated sulphuric and nitric acid are poured into it; finally, 500 grammes of alcohol are carefully poured on top of the oil. The latter gradually sinks to the bottom. As soon as it comes in contact with the acids, it develops heat and causes slight effervescence from boiling. In consequence thereof certain ethereal compounds are produced, which impart some of their own agreeable odor to the petroleum. The latter assumes a yellowish color, and after having stood in contact with the acids and alcohol for about one hour, it is gently agitated with water, and after about ten hours decanted. The lower layer, which is a mixture of acids, water, and alcohol, may be utilized, according to Masson, for deodorizing the heavier petroleum oils, by agitating them for twenty minutes with the mixture, decanting after twelve hours, and then washing with milk of lime, to remove all traces of acid.—*Pharm. Centralh.*, 1877, 293, fr. *Rép. d. Ph.*

Fallacy of Trommer's Test.

In the *Medical Times* of Oct. 27th, George Hay, M.D., undertakes to show that the indications for sugar may not be obtained with Trommer's test in the examination of urine, while, at the same time sugar is actually present. The following is the method recommended by him as calculated to avoid this error: "To a neutral solution of sulphate of copper free from iron and other impurities add a solution of neutral tartrate of sodium, and stir the mixture in the cold. In a short time a nearly white or slightly bluish precipitate of tartrate of copper will fall. Decant from this the supernatant fluid, and wash the precipitate twice with cold water by decantation. Cover the precipitate with a moderately strong solution of caustic soda, and stir for a few minutes, when it will be found that the tartrate of copper will dissolve, forming a liquid of a deep blue color. Filter this solution into a glass-stoppered bottle, and preserve for use in a cool place away from the light.

That this is an efficient testing liquor appears from the fact that if, to a few fluidrachms of pure water, we add a minute quantity of grape sugar, and pour a small quantity of this feebly saccharine solution into a test-tube, and, after rendering it slightly alkaline by means of a few drops of a clear solution of caustic soda, we then add of the testing liquor sufficient to produce a distinct and pretty strong blue color, as soon as this mixture is brought to the boiling-point a beautiful red or orange-red precipitate of suboxide of copper will be obtained, and that without delay." When, however, urine is substituted for an aqueous solution of sugar, there will frequently be present a substance or substances, soluble in alcohol, which have the power of retarding the precipitate of the suboxide. To avoid this, the author gives the following directions:

Prepare a solution of tartrate of copper, as above described, and also a solution of caustic soda. Observe that both these solutions are perfectly free from sedimentary matter. Evaporate the urine to dryness, extract with boiling absolute alcohol, and filter while hot; evaporate again, dissolve the residue in water, and filter once more. The filtrate, having been rendered alkaline by a few drops of the soda solution, has added to it a few drops of the above mentioned test-liquid and is then boiled; if no precipitate is obtained at once, place the test-tube in the water-bath, maintained at 212° F., and *wait* half an hour. If by the end of this time a precipitate of suboxide of copper is obtained, sugar is certainly present; if no precipitate of the sort is obtained when the half-hour has expired, then sugar is certainly absent.

An Improved Poison-Cupboard.

MR. HOLBE, an apothecary of Berlin, has constructed a new poison cupboard, which was primarily designed to comply with all the requirements of the German drug and poison laws, but which deserves to be adopted anywhere, even without government coercion. The accompanying figure illustrates the interior. Each set of poisons is separate by itself. The outer door being unlocked, it still requires a key to get at the particular poison wanted, thereby intensifying the attention of the person opening it. Separate scales, spatulas, and mixing vessels are kept in each compartment. It is kept for sale, ready made, by Warmbrunn, Quilitz & Co., of Berlin.—*Arch. de Pharm.*, Oct., 1877.

Holbe's Poison-Cupboard.

New Method of Milk Analysis.

H. RITTHAUSEN proposes to add to milk, previously diluted with water, solution of cupric sulphate and a quantity of caustic soda or potassa, just sufficient to react with the copper salt. The liquid must not be rendered alkaline. In this way all the albuminoids are precipitated, and the filtrate may be used for the determination of the milk-sugar. The cupric precipitate contains, besides the albuminoids, the whole of the fat, which may be extracted with ether, and separately determined. The residue, deprived of fat and dried, is weighed, and then ignited to destroy the protein-bodies. The weight of the latter results from the difference. In order to determine the salts and the water, a separate portion of milk is mixed with pure, recently ignited quartz-sand and dried to a constant weight. The loss of weight represents the water. Finally, by subtracting the values found from the original weight of milk, the residue represents the salts.—*Pharm. Centralh.*, 1877, 347, fr. *Chem. Centralbl.*

Sulphate of Cinchonidia as an Antiperiodic.

Dr. H. L. Warren, of Illinois, writing to the *Chicago Medical Journal and Examiner*, says: "I have recently noticed two or three articles with reference to substituting sulphate of cinchonidia for sulphate of quinia, the writers claiming that the cheaper drug fulfilled every indication met by quinine. I know that many physicians are not aware of this fact, and wish to add my testimony to that already given. I find that in malarial fevers of whatever type, the cinchonidia salt has proved just as certainly a specific as the salt of quinia. Having had a large number of cases of this class treated almost entirely with the drug in question, I have learned to place just as much confidence in it as I have had in quinine, and with equal confidence predict a favorable result. It has not failed in a single instance to prevent the next paroxysm in a tertian, and the next but one, sometimes the next, in a quotidian ague, and is equally efficacious in remittent fever, being well borne by the stomach, and not producing any of the unpleasant head-symptoms which so certainly follow large doses of quinine. I administer it in five-grain doses, either in pill or powder, as the patient desires, every four hours, day and night, without any reference to paroxysm, intermission, remission, or exacerbation, until the patient has passed safely through the "chill day" in a tertian ague, and through two days without chills in quotidian; then continue in smaller doses, say two grains after or before each meal. Considering the fact that quinine is sold at nearly four dollars per ounce and sulphate of cinchonidia at only eighty cents, every physician should be acquainted with the above facts. It will be seen that it only requires about a drachm (or ten cents' worth) of the drug to completely control the disease."

In the *Louisville Medical News* of November 24th, Dr. A. G. Hobbs, writing on the same subject, says: In malarious districts, such as is Southern Indiana, cinchonidia is the country practitioner's greatest boon. The difference in its cost as compared with quinine—one-fourth—is no small item to him who has his two or three ounces a week to buy. During the last three months I have used cinchonidia almost exclusive of quinia in nearly three hundred cases of chills, intermittent, remittent, and bilious fevers, and out of the whole number have been compelled to resort to arsenic in but five cases of chills. My experience in these three hundred cases of malarious fever is as follows:

1. I think it fully equal to quinine as an antiperiodic. Have never used it as an antipyretic, as in typhoid fever, pneumonia, etc.; but if I ever find it necessary I shall not hesitate to risk it as such.

2. It produces no tinnitus aurium; at least, I have never been able to discover it in the size doses that I give it to stop malarious attacks.

3. The stomach undoubtedly tolerates it better than quinine.

4. I find it, so far as I can observe, fully equal to quinine as a tonic in combination with iron.

I administer it in doses same as quinine by bulk, which is about one-third greater by weight. I find the following varieties in the cases of ague that I have kept note of: Simple tertian, seventy-six per cent.; double tertian, five per cent.; quotidian, fourteen per cent.; duplicati, one per cent.; triplicati, two per cent.; quartan, one per cent.; double quartan, one-half per cent.

In the *Medical and Surgical Reporter* of Nov. 17th is another extremely interesting paper by Dr. T. N. Rafferty, on the properties of sulphate of cinchonidia, which our lack of space alone prevents our quoting in full. His experience with the remedy has extended over three years, and includes the use of nearly three hundred ounces. He has administered it to patients of all ages and under nearly all the circumstances when quinia was thought to be indicated. As a simple tonic, he believes the effects of the two remedies to be precisely similar. "Given in doses of five to twenty grains, or more, cinchonidia acts especially on the brain and nervous system; and here, I believe, is a decided difference between its action and that of quinine, although most writers have made their effects identical, except in degree. The first difference which I have noticed, is that while quinine occasionally, and in some persons frequently, irritates the stomach, cinchonidia does so much the more frequently, this being, in many instances, the greatest drawback to its use. In asserting this, I am aware of the fact that it has been urged by some, if not most, of those who have written recently on this subject, that the cinchonidia is much less apt to produce nausea than quinine, and for this reason is often to be preferred, especially in children, and in all febrile diseases in which the stomach is disposed to a state of irritation."

The first observable effect of a full dose of quinia is the cerebral phenomena—abnormal sound, buzzing and roaring in the ears, impairment of hearing, and sometimes defective vision. None of these, so the writer affirms, are induced in any marked degree by cinchonidia. Quinia reduces the force of the heart's action always, and its frequency, almost always; while cinchonidia diminishes the force with as much certainty, but in most persons increases the number of pulsations. Both produce muscular prostration, lower the temperature of the body, followed by profuse and clammy perspiration; and, in excessive doses, may result in prostration and collapse.

Dr. Rafferty's experience demonstrates that in point of therapeutic efficacy the two remedies stand on precisely the same footing, although the effects of quinia are to most persons less disagreeable; and for this reason alone is it to be preferred. The amount required for the arrest or

cure of an intermittent fever is 25 to 30 per cent. more than of quinia. It may be administered by the mouth, rectum, or hypodermically; but it is well to remember that, being somewhat more irritant in its local action than quinia, it is more liable, when used hypodermically, to produce troublesome abscesses than the latter. Its use in irregular cases of neuralgia, chorea, hysteria, and pertussis, had not been attempted; but, in pneumonia, typho-malarial fever, and two or three cases of puerperal fever, its use had been followed by a marked reduction of temperature, by a reduction of both the force and frequency of the heart's action, and, in fact, by more or less complete remission. Like quinia, cinchonidia added to the force of uterine contractions when once established. Locally, cinchonidia is rather more irritant than quinia, and will serve similar purposes, as an application to indolent ulcers, etc.

Picrate of Ammonium in Intermittent Fever.

Dr. J. W. Snider, of Fairland, Ill., writes to the *Ohio Medical Recorder* that intermittent fever has been unusually prevalent in his section of the country this year, no persons or ages being exempt. As a consequence, a variety of remedies was tried, and chief of them *quinia*. Many stomachs failed to retain this remedy in the large doses required, and even when the paroxysms were arrested it was only for a brief period. *Cinchonidia*, owing to its cheapness, received a trial, "and was in several cases successful, as much so as quinia."

Fowler's solution was efficient in some cases of long standing; but relapses occurred, and it seemed to have lost its virtue. *Picrate of ammonium* was resorted to in a number of cases, always with success; and the three following cases are given because they had been unsuccessfully treated with quinia:

Case First.—Mr. M., aged forty-five years. Has had chills, tertian type, for seven weeks, held partly in check by quinine, cinchonidia, and arsenic. For last two weeks has had chill every second night, though taking forty-five drops of Fowler's solution daily. Prescribed grain doses of picrate ammonium twice a day till six doses were taken. Patient has not had a chill since. On fourth day after, repeated the prescription for fear of relapse.

Case Second.—Child, aged three years, tertian type. Came into my hands after having taken calomel, quinine, etc. Gave Fowler's solution. Chills checked for a few days, but repeatedly recurring. Prescribed one-sixth grain doses picrate ammonium twice a day for three days. No more chills. A few days after repeated the prescription. Child well.

Case Third.—Mrs. S., aged twenty-eight years. Chills for five or six weeks, beginning with slight attack of remittent fever. Quinine in five-grain doses every two hours till four were taken. A chill or two missed. Six-grain doses of cinchonidia, repeated five or six times, failed. Arsenic for a length of time without effect. Gave grain doses of picrate ammonium twice a day for three days; no chills since.

A New Spray-Apparatus.

Mr. B. Wills Richardson, of Dublin, has published a description of a new spray-apparatus, represented in the adjoining cuts, which varies somewhat from those until recently in use. The chief desiderata in a spray-apparatus are, as he says: (1) the capability of producing a large and thoroughly pulverized volume of spray; (2) facility of being worked without causing fatigue and apprehension of failure during an operation; and (3) economy, both as regards original cost and subsequent wear and tear. Fig. 1 represents a sectional view of this spray-tube with bottle and stopper, and may be described as follows:

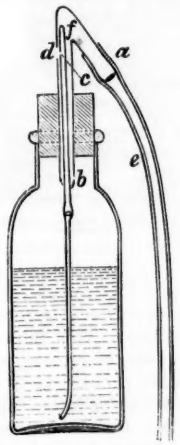


Fig. 1.—B. W. Richardson's Spray-Apparatus.

a, Connection of the caoutchouc blow-pipe with the spray-tube.
b, Aperture in spray-tube for the escape of air into the bottle.
c, Aperture at which the escaping fluid is pulverized.
d, Aperture for scattering the pulverized fluid.
e, Caoutchouc blow-tube, which communicates also with the bellows.
f, Metal spray-tube.

In the ordinary perfume spray-tubes the vacuum produced by the blast of air rushing across the upright tube raises the fluid. When thus raised, it is broken into spray by contact with the blast. In B. Ward Richardson's (London) ether-spray apparatus the power of the bellows is exerted in raising the fluid up to the nozzle which scatters it. By combining both of these arrangements, a perfectly pulverized spray of great volume is produced, which extends from the outlet orifice *c* (Fig. 1) to a distance of from 6 to 10 feet, and having a width, when expanded, of about 2 feet.

By prolonging the inner tube downward within the bottle by means of fine rubber tubing, the spray-tube can be used with large-sized bottles for tedious operations. For perfuming a room, a short piece of rubber tubing is substituted for the long blow-tube; a small bottle for the large one, and the breath of the operator for the bellows.

It is essential that the cork and the metal spray-tube fit tightly, the cork in the bottle and the tube in the cork; a vulcanized rubber stopper is therefore preferable to a cork. Whatever size of bottle is used, the small inner tube should reach quite to the bottom.

Fletcher's blower, which gives a pressure of 10 ozs. to the sq. inch, will work the spray-tube, but Mr. Richardson prefers a larger one which gives double this pressure. This blower is well known in the chemical laboratory in connection with gas-furnaces and blow-pipes. It is worked with the foot and is a wedge-bellows (Fig. 2), having two openings guarded by valves, one in the upper and the other in the lower board. Both valves open upward. A strong internal spring keeps the bellows open when not pressed by the foot. To the upper board the circumference of a disc of stout sheet-rubber is securely fastened with wire. The air enters the lower valve, is forced through the opening by the pressure of the foot, and distends the rubber, which is guarded by a net from over-distention. The elasticity of the rubber insures a constant flow of air. Too thick a piece of rubber should not be used for the latter feature of the bellows. As a blower for a laboratory fire, the bellows may be used by replacing the spring-tube with a piece of iron tubing about 18 inches long.

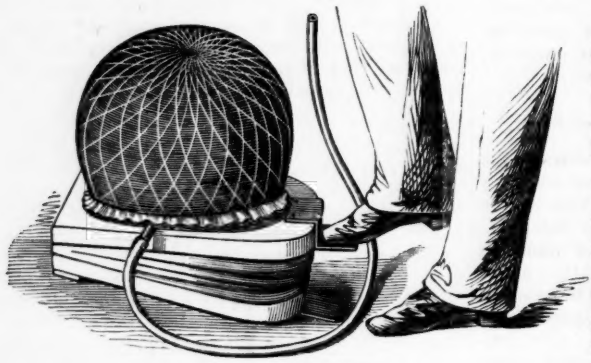


FIG. 2.—Fletcher's Blower.

Chemical Reagents.

BY MALVERN W. ILES.

ALTHOUGH it is generally conceded by chemists that reagents should be pure, yet too often, I am convinced, is this subject disregarded even by competent analysts.

Many discrepancies can, I think, be traced to this source, for if the very tools which the chemist uses to make the elements respond to his inquiries are defective, then his responses must inevitably be more or less erroneous.

It has been a subject of note with what extreme care the analyst determines the ash of filter papers, even to a very small fraction of a milligramme, yet entirely disregards the fact that his reagents may be contaminated with phosphoric and sulphuric acids, also soda, potash, etc.

In the analysis of an iron ore, in which a determination of phosphorus and sulphur is required, it is of the most vital importance that the chemical reagents used should be absolutely free from sulphuric acids.

Prof. Albert Leeds read a paper before the New York Academy of Sciences, in which he mentions the wide distribution of phosphoric acid in nature, having found it in a number of substances in which it was little expected.

The scientific metallurgists have of late years greatly improved the quality of their iron and steel, by securing flux, fuel and building material, containing a minimum of sulphur and phosphorus. Should not the chemist who lays claim to accuracy be equally careful in respect to his results? To illustrate this point, W. H. Greenwood states that "sulphur and phosphorus are the great enemies of good steel; 0.2 per cent. of sulphur renders the metal brittle and 'red short,' while 0.1 per cent. of phosphorus is objectionable, as tending to render it 'cold short' and unworkable at ordinary temperatures." We can easily see what great mischief would be caused by an incorrect analysis under such circumstances.

Fresenius states that we should make it an invariable rule to test the purity of our reagents before we use them, no matter whether they be articles of our own preparation or from other makers.

If this excellent advice were placed in the form of a question to many an analyst, I imagine it would be a source of embarrassment. Nor could a satisfactory excuse be given by stating that all their chemicals were labeled *chemically pure* (C. P.).

I have frequently found chemicals upon which the letters C. P. occupied a most conspicuous place, which upon qualitative analysis showed large percentages of impurities. I therefore look with suspicion upon every chemical labeled *chemically pure*, and regard it generally as a trick of the manufacturers to obtain a higher price for their goods than they really deserve.

In order that I may not be misunderstood, I will state that I believe there are conscientious manufacturing chemists who greatly promote chemical science by the care and intelligent labor they give to their chemicals.

It is not my intention to give a systematic treatise upon chemical reagents; but simply a brief statement of the impurities detected in reagents used in the Qualitative Laboratory of the School of Mines, which it is thought will be fair representatives of chemicals used in laboratories; since the reagents examined are both from American and foreign manufacturers.

The enumeration of the impurities detected will, it is hoped, be of more or less interest to the manufacturing chemist, the analyst, and the pharmacist.

IMPURITIES DETECTED.

Ammonium Hydrate.—From C. K. Kraft, marked C. P., is quite pure; it however contains a trace of alumina and some carbonic acid, probably from the atmosphere.

Ammonium Acetate and Carbonate were found to contain traces of chlorine.

Ammonium Chloride.—From E. Merck, Darmstadt (labeled C. P.)—I found a large quantity of dirt, chips, etc. A trace of sulphuric acid was also detected. By filtration a fair article is obtained.

Ammonia-Iron Alum (bought for C. P.) contains a trace of manganese, lime, and an appreciable amount of chloride.

Ammonium Sulphate (from E. Merck) contains a very large amount of chlorine, a trace of nitric acid, and considerable soda.

Arsenic Salts are very liable to contain both the *ous* and the *ic* acids.

Barium Carbonate.—I examined a number of samples of this salt, and found it remarkably impure. Since it is constantly used in the Qualitative Laboratory, grave errors might easily arise from its use. I find, besides *some* barium carbonate, the following impurities: Phosphoric, hydrochloric, and silicic acids; alumina, lime, magnesia (trace), manganese (trace), large amount of soda, and a very large amount of barium sulphate.

Barium Chloride.—The sediment from this salt was found to contain potash, lime, alumina, carbonic, silicic, and sulphuric acids; considerable organic matter was detected. Even with the above-mentioned impurities, the salt is sufficiently pure for qualitative purposes, since it is almost exclusively used for the detection of sulphuric acid.

Barium Nitrate.—E. Merck's article contains an appreciable quantity of barium sulphate. Charles T. White's barium nitrate contains no barium sulphate; the salt was found to be very pure.

Calcium Chloride contains some carbonic and sulphuric acids, also a small amount of calcium hydrate.

Chrome Alum contains a little iron and alumina; also silicic acid.

Hydrochloric Acid (from C. K. Kraft, labeled C. P.)—Generally contains a minute trace of iron and arsenic.

Hydro-di-sodic Phosphate contains quite an appreciable amount of sulphuric, a trace of hydrochloric, and also silicic acid, and some alumina. (From E. Merck, labeled C. P.)

Magnesium Sulphate contains a trace of nitric acid. (From E. Merck, bought for C. P.)

Nitric Acid (from C. K. Kraft, C. P.), sometimes contains a trace of iron, otherwise very pure.

Lead Acetate contains some iron, hydrochloric, and sulphuric acids.

Minium contains zinc.

Potassium Antimonate (from E. Merck), contains a very large quantity of potassium carbonate.

Potassium Oxalate contains a very large quantity of sulphuric acid. (From E. Merck, bought for C. P.)

Potassium Hydrate (commercial) comes in a liquid form from C. K. Kraft; the sediment contains considerable alumina, a trace of manganese, iron, lime, silicic, carbonic, and hydrochloric acids. (Commercial article, not labeled C. P.)

Stick Potassa, from Powers & Weightman, contains a remarkably large quantity of potassium chloride, considerable alumina, and, of course, some carbonic acid, which it absorbs from the air. E. Merck's stick potassa is quite pure; it contains, however, a trace of alumina.

Potassium Sulphate contains alumina, sulphuric acid, and organic matter.

Sodium Acetate contains a trace of chlorine.

Sodium Carbonate.—E. Merck's dry anhydrous sodium carbonate is generally very pure; it, however, frequently contains a minute trace of sulphuric and hydrochloric acids. Some samples are entirely free from sulphur.

Sulphuric Acid (common) comes from C. K. Kraft, contains iron and lead; very rarely contains nitric acid or oxides of nitrogen.

Sheet Zinc contains considerable lead. Granulated Belgian zinc contains a trace of iron. New Jersey and Lehigh zinc is nearly chemically pure, contains only a trace of iron, and occasionally arsenic in minute quantities.

Opium in Epilepsy.

In the *Ohio Medical Recorder* of November, Professor D. Todd Gillman, of Columbus, gives some sensible remarks on the fashions of medicine, followed by some personal experience in the use of opium in cases of epilepsy, without having been governed by any preconceived opinions in regard either to the disease or the drug. Cases were taken as they presented, and, as a consequence, observations were made upon such as had their cause in drunkenness, pain, traumatism, heredity, and cases of periodical occurrence. He declares that his success has been uniform, and that in every instance he has been able to arrest the paroxysms, and in even notable instances the opium succeeded after other remedies had failed.

Cinchona and Iron-Salts.

CATILLON remarks, in *Répertoire de Pharmacie*, that the well-known discoloration of a mixture of syrup or wine of cinchona with iron-salts—with iodide of iron, for instance—which is owing to the formation of a tannate of iron, may be entirely prevented by dissolving alcoholic extract of cinchona in pure glycerin, and adding to it the iron-salt likewise dissolved in glycerin. The mixture remains clear, and has the characteristic tint of cinchona.

Grindelia Robusta in Whooping-Cough.

AT a recent meeting of the Suffolk District Medical Society, Dr. Pattee called attention to the beneficial effects of the drug in certain pulmonary affections, and remarked that most of the fluid extract sold in this market was said to be worthless. Dr. Pattee had used the tincture in bronchitis, asthma, and whooping-cough, in doses of half a drachm or more, repeated every one or two hours. The effect was said to have been curative in thirty cases of whooping-cough, after three or four days, without the occurrence of relapses. The dose for a child two years old would be about ten drops.

Thymol as an Antiseptic.

DR. L. LEWIN has found that the addition of one-tenth of one per cent. of thymol is capable of arresting saccharine and lactic fermentation, which would place this substance even higher in rank than carbolic or salicylic acids. It suppresses every kind of fermentation or putrefaction. Dr. Lewin recommends it chiefly for the antiseptic treatment of wounds, also as a remedy for stomachic fermentation and dilatation, and in diseases depending upon the action of living organic germs, such as diphtheria. It also arrests excessive secretion by mucous membranes. For internal administration it may be given in solution in water, 0.5 gm. of acid in 1,000, afterwards of double the strength, 1.0 gm. in 1,000, two, three, or more tablespoonfuls a day. For external use the saturated aqueous solution (1 : 1,000) is generally sufficient; but for washing out offensive wounds it should be employed in a stronger, alcoholic, solution.—*Virchow's Archiv.*

The Use of Capsicum with Quinia.

PROF. WM. H. THOMPSON says that either capsicum, ginger, or other aromatics, combined with quinia, will diminish the amount required of the latter.

"A good dose of capsicum combined with twenty grains of quinine will act as well as thirty grains of quinine without the capsicum. Spices in general stimulate the portal circulation and promote the flow of bile, and hence their universal use in hot climates. There is a tendency on the part of quinine and capsicum to purge, and sometimes to purge violently. In such cases the purgative action is caused by the increased flow of bile produced by the capsicum. Ginger and quinine, when combined, do not purge, and it makes a very good combination. If the medicine is administered in form of pills, capsicum may be preferable because of the less bulk required; but, if desirable, the ginger may be given separately, and with the same effect as when combined with the quinine. The proportions should be one grain of capsicum to three of quinine; with ginger, one grain of each."—*The Medical Record.*

Solidification of Carbon Bisulphide.

M. MERCIER finds that if bisulphide of carbon be added to a mixture of a drying oil and protochloride of sulphur at the moment of mixing, it is entangled in the jelly formed by the oil and protochloride. With boiled linseed oil and ten per cent. of the protochloride a transparent elastic mixture can be obtained containing 70 per cent. of bisulphide of carbon. The substance ignites only with difficulty, and loses the contained bisulphide but slowly.

Formic Acid as a Preservative.

ACCORDING to the statements of G. Feyerabend, of Tilsit, formic acid, added to acidulous solutions, exceeds even carbolic acid in preservative power. It is particularly adapted to the conservation of fruit-juices. Its taste is purely acid and agreeable, its price is moderate, and the quantity required to be added to vinegar, fruit-juices, glue, ink, etc., is only $\frac{1}{4}$ to $\frac{1}{2}$ per cent.—*Industr. Bl.*

Detection of Salicylic Acid in Mixtures.

CONCENTRATE the mixture in the water-bath, to remove any accompanying alcohol, add to the residue dilute sulphuric acid in strong excess, so as to render it strongly acid and to restore it to a fluid condition, and shake the whole with ether, which dissolves the salicylic acid. On evaporating the ethereal solution, the acid is left behind, and may be weighed.—*Pharm Centralh.*, 1877, 321.

Combined Effects of Opium and Belladonna.

DR. J. N. MILLER reports, in the *British Medical Jour.*, a case to prove that belladonna or its alkaloid rather intensifies than antidotes the effects of morphia.

In this case it was found that four-fifths of a grain of morphia, combined with one-fortieth of a grain of atropia, was equal in the relief of pain to two grains and two-fifths of morphia, and that it produced sound sleep at once, while the morphia alone gave only dozing and easily-interrupted sleep for an hour or more.

At another time, two doses of four-fifths of a grain of morphia and one-thirtieth of a grain of atropia were given with an interval of four hours, and had the effect of rendering the patient so comatose that it was only with the greatest difficulty that she was aroused.

RECENT PAPERS.

American Journal of Pharmacy.

November. H. G. DEBRUNNER: "Iron and its Constituents in Regard to Pharmaceutical Preparations." [Regards soft steel drillings and turnings as much preferable to iron wire. The former are also purer, containing 99.52 (axle steel) and 99.539 (steel boiler-plate) per cent. of pure iron. The author then discusses the compounds which iron and its constituents form by the action of various solvents. In conclusion, he recommends a colorimetric test for the estimation of the strength of a solution of dialysed iron, by preparing a standard solution of known strength, and diluting the unknown solution successively to such a point that it will exhibit, in equal layers, the same shade of tint as the standard solution.]

H. TRIMBLE: "Estimation of Quinia." [The author proposes a colorimetric test, based on the thalleioquin reaction. A standard solution of 0.01 grm. (0.154 gr.) of quinia, or one of its salts, is prepared by dissolving it in about 5 c.c. of fresh chlorine water, adding 10 c.c. of ammonia, and diluting to 100 c.c. In estimating quinia pills, etc., one of them is taken, powdered, treated with chlorine and ammonia, and the liquid diluted until it has, in equal layers, the same tint. From this may be calculated the quantity of quinia.]

H. TRIMBLE: "Preparation of Concentrated Nitric Acid." [Recommending the old method of heating nitric, mixed with 2 parts of sulphuric acid, in a retort over a small flame. The nitric acid distilling over is of a high spec. grav., of a bright yellow color, and very energetic in its action.]

Pharmaceutische Zeitung. Nos. 83–88.

PROFESSORS OF PHARMACY? [The German Apothecaries' Society at their last meeting resolved to memorialize the government of the various States to establish a separate Chair on Pharmacy at those universities where the same did not yet exist, and to urge that it be filled with a practical pharmacist. In answer to this petition the Bavarian Government, after soliciting the advice of the medical and philosophical faculties of the three Bavarian universities, replied substantially that there are already two such professorships in existence, one at Munich and the other at Erlangen. There is, however, none at Würzburg. And the senate and faculties of the latter university had unanimously declared that the establishment of such a chair would not only not be a benefit to the pharmaceutical profession, but an absolute disadvantage. Pharmacy as such has almost ceased to exist. Division of study, like division of labor, has caused the splitting up of a mixture of branches, such as apothecaries formerly used to possess, into distinct professions, which cannot well either be pursued or studied by one man exclusively. Hence they cannot be sufficiently mastered in all their details to be taught by one man, and students will, under all circumstances, profit a great deal more by having them taught by specialists. The practical part of the profession, as well as the elementary education in the rudiments should be left to the employer. And here the report of the senate of the university severely censures the present employers, whose pupils, when coming to the university, are frequently found so ignorant in the most common details of the profession, and so little familiar even with the appearance and names of many drugs, that a great portion of their time at the university has to be employed in making up for lost time. There is a great deal of truth in these remarks, and the latter part of them deserves to be particularly called attention to, for it is *tout comme chez nous.*]

CHARBONNIER (fr. *Jour. Ph. et Ch.*): "Adulteration of Valerian." [States that the market contains quantities of valerian root mixed with as much as 30% of the root of *Vincetoxicum.*]

L. HEBENSTREIT: "On Bebeeria as a Substitute for Quinia." [Denies absolutely that bebeeria has reliable febrifuge properties, and implies that its reputed virtues are mainly due to the puffings of transatlantic (American) and English physicians. He declares that he will await the verdict of 'German' physicians. If the author were less self-conceited, we would undertake to show him that the opinions of transatlantic physicians are, as a rule, based on as sound common sense and are just as reliable as those of the continental ones, although we cannot deny that therapeutics are more systematically studied in Germany than elsewhere.]

PROLLIUS: "Assay of Opium." [Exhaust opium by means of water, evaporate the solution and dissolve the extract in 34% alcohol, in such proportions that 10 parts of the solution represent 1 part of opium. Then mix 50 parts of this tincture, 25 parts of ether, and 1 part of stronger water of ammonia, shake them briskly together and let stand 24 hours. Both layers appear first perfectly limpid. Gradually, however, the morphia is separated at the point of contact of the two layers, in fine crystals, coalescing to a crust, which sinks to the bottom. The coloring matter, narcotin and the other uncrystallizable constituents, remain in solution partly in the ether, partly in the alcoholic layer. The liquids having been poured off, the crystals are washed with a little very dilute alcohol, dried and weighed. The results are said to be very reliable.]

Berichte der Deutschen Chem. Gesellschaft.

J. PICCARD: "On Cantharidin and One of its Derivatives." [The author has found, by determination of the vapor-density of cantharidin, that the heretofore accepted formula $C_5H_6O_2$ must be doubled; its composition is therefore $C_{10}H_{12}O_4$. He has also discovered that, by heating cantharidin with hydriodic acid in closed tubes, the former is converted into an isomeric substance, having strong acid properties, and forming anhydrous crystals. He has named it cantharidic acid.]

JUL. THOMSEN: "The Amount of Water in Dried Chloride of Gold." [Chloride of gold, such as is used in the arts and in medicine, is the crystalline hydrated *acid* salt, which heretofore has been considered to contain 3 molecules of water: $AuCl_3$, HCl, $3H_2O$. The author has, however, by means of a series of very exact analyses of the perfectly dry salt, demonstrated that its composition is $AuCl_3$, HCl, $4H_2O$. This corresponds to a percentage of 47.80 of metallic gold, while, according to the old formula, the percentage would have been 49.98.]

Répertoire de Pharmacie. Nos. 19–21.

J. CLOUET: "Arsenical Glucose." [In view of the fact that glucose is used at present in very large quantities by brewers, confectioners, and others, and that its consumption is likely to assume immense proportions, the author warns from the use of *glucose containing arsenic*, the presence of which is owing to impure sulphuri cacid used in its preparation. He has met with samples of glucose containing from 0.015 to 0.109 gm. of arsenic in 100 gms. of glucose.]

S. COTTON: "Adulteration of Santonin." [The author states that he has met lately with samples of santonin, containing 22.5% of boric acid. The fraud is easily discovered by igniting the substance, dissolving the residue in boiling water, and allowing to crystallize, when boric acid separates, recognizable in the usual manner.]

POISONOUS BREAD, obtained from a Paris bakery, and jeopardizing the lives of a large number of persons, was found, on inquiry, to have been rendered so by being baked in contact with a fire fed by second-hand lumber, which was partly painted, and partly impregnated with copper and zinc. The Board of Health of Paris have therefore officially interdicted the use, for culinary purposes, of any wood which has been painted or been treated with any chemicals whatever.

Zeitschrift d. Oester. Apotheker Vereins. Nos. 30–32.

ED. HANAUSEK: "On Some Peculiar Resins." [The author furnishes an account of some less known resins, belonging to the Museum of the Vienna Board of Trade. 1. *Résine Chaï* of Cochinchina. Chaï-resin, in large, bright yellow masses, is said to be derived from Shorea rubrifolia (Dipterocarpeæ). The so-called Résine Dhoona, Dhoona resin, or Saul resin, is obtained in India from Shorea robusta Roxb., and another resin from Shorea Tambuqaia; but both the latter differ from the former. 2. *Résine de Chackamaque*, Chackamac Resin of Madagascar, large, irregular pieces, interspersed with white patches of strong and disagreeable odor; origin unknown. 3. *Résine de l'arbol à brêa.* Resin of the "elemi" tree. Such is the name of a specimen received from Manila; but its characteristics differ entirely from those of Manila-copal, Piney-resin, Manila-elemi, or Bengal elemi.]

Pharmaceutische Zeitung f. Russland. Nos. 17–20.

A. POEHL: "Chemical Investigation of Eucalyptus Leaves." [The author confirms the absence of any alkaloid. The essential oil, which was separated by distilling in a stream of carbon dioxide, or the so-called eucalyptol, is perfectly colorless, boils at 170–171° C., and has a specific gravity of 0.9175 at 15° C. It turns the plane of polarized light to the right. Eucalyptol possesses the property of other terpenes, to convert water in presence of air and sunlight into hydrogen dioxide, or to convert oxygen into ozone.]

PROF. DRAGENDORFF: "On the Constituents of Ergot." [Announcing that he has succeeded in separating one of the substances, which he formerly obtained and named Sclererythrin (see NEW REM., 1876, p. 208), into three bodies, one being sclererythrin proper, another being a very bitter alkaloid picrosclerotine, and a yellowish-brown acid, fusco-sclerotic acid.]

Gazette Hebdomadaire. Nos 31–40.

DR. KERCEA: "Difference in the Action of the Salts of Pilocarpia according to the Dose." [The author states that, according as a greater or smaller quantity of the hydrochlorate of pilocarpia is administered, sweating or salivation may be produced at will.

Thus, a dose of from 1 to 10 milligrames causes sweating. 10 to 20 causes salivation, and a dose of more than 20 milligrammes causes nausea and vomiting.]

V. FELTZ: "Experiments with Chloroform upon Putrefied Blood." [Chloroform mixed with putrefied blood in the form of a vapor, or directly added to it, has no appreciable effect upon the vibrios nor upon the septicity of the blood. Consequently it should never be employed to separate the diastasic from the organic ferments in putrefied blood.]

Bulletin Général de Thérapeutique.

M. LABORDE: "The Physiological Action of Salicylate of Soda." [In a paper read before the Academy of Medicine of Paris, Mr. Laborde draws the following conclusions as the result of numerous experiments made upon dogs:

The physiological action of the salicylate of soda is directed principally to the functional phenomena of sensibility to pain.

The mechanism of this action resides in the influence exercised by the chemical substance, not upon the conducting property of the sensitive nervous cord, but upon the receiving and elaborating centre of the peripheric impressions.

This action upon the functional phenomena of sensibility, and consequently upon the cerebral seat of these phenomena, affords an explanation of the effects produced upon painful symptoms in the morbid state, and it is principally in virtue of this property that salicylic acid is effective in the cure of articular rheumatism.]

ORIGINAL COMMUNICATIONS.

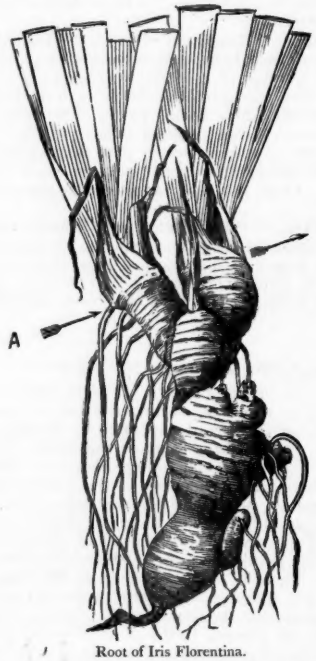
SCENT-YIELDING PLANTS.*

BY G. W. SEPTIMUS PIESSE, PH.D., F.C.S.

(Continued from page 341.)

Orris-Root.

IRIS Florentina is the plant which yields the orris-root, everywhere so much esteemed. Even the peasant-girls in Italy, and in those countries which fringe the Adriatic, possess a few hanks of orris-beads. M. Grazzini, a turner near Florence, produces more than two tons of orris-beads annually. Beauty they have none; but their fragrance, like that of violets, is lasting and always fresh. The orris-root, having been slowly and perfectly dried, is cut with circular



Root of Iris Florentina.

saws into cubes which are then converted into beads. Some hundredweights of chips and shavings result from this work, to the value of which I shall presently advert. The Iris Florentina, or orris-plant, for commercial purposes, is mostly farmed about Pontassieve, in Tuscany. The root-harvest for each plantation takes place once in three years, so that of necessity there are plants always on the farm in three stages of growth. The harvest takes place in the spring before the iris begins its usual growth. The roots are dug up and the flags cut back, as shown in the annexed illustration; each root is then decapitated at a point indicated by the arrows AA; the head is then replanted and grows with great vigor, making, in the course of three years, numerous offshoots in the form of fresh roots. This iris flourishes best in a soil that is somewhat marshy and stony, a kind of land not often found except at Pontassieve, where it exists in perfection; it is, in fact, a poor soil, but notwithstanding that, the plants require no manure.

The Iris Florentina is of larger growth than the common blue flag of English gardens, and the flowers far less nu-

*From *The Garden*.

merous and of a very pale blue; moreover, it does not come into blossom when first transplanted into British soil, until five or six weeks later than its naturalized English ally. In spring, when the roots are dug up, they are spread out to dry and ripen in the open air; each root is then trimmed by a woman, with a short, sharp knife, into the shape in which it is found in the market. It is also at the same time sorted into the various qualities under which it is sold. The dark-colored roots are often bleached by means of the fumes of burning sulphur—an operation, however, which is very detrimental to them as far as perfumery purposes are concerned; but for bead-manufacture they are improved by being whitened.

For scent-yielding purposes the orris-root is used in two forms—one in powder, the other as a spirituous tincture. For producing the powder or flower of orris the root has to be perfectly dried; it is then crushed under mill-stones, and finally reduced to powder in a drug-mill. The orris-powder thus produced is mixed with dry wheat-starch in the proportion of 1 pound of orris to 6 pounds of starch-powder. After being sifted and blended they are allowed to remain together for a time, when the starch becomes fragrant, and the product is the well-known "Violet Powder" of the shops. In this way many tons weight of orris-flour are used. Almost all tooth-powders contain about one-quarter of their weight of orris-root flour. Shakespeare thus chides the violet:—

> Whence did thou steal thy sweet that smells,
> If not from my love's breath?

When orris-flour is tied up in cushions or bags (sachets), and distributed among the clothes in a bureau, it gives to the linen a most delightful odor.

The tincture or essence of orris is made by intermixing 1 gallon of rectified alcohol and 8 pounds of broken orris-root; or, better still, the chips and shavings from an orris-bead turnery. These ingredients should remain together in a glass or copper vessel for about a month. When drawn off the tincture will be quite bright, and it is then ready for use. This extract enters largely into the composition of many of the most celebrated "bouquets," but it is never sold pure, because its odor, although grateful, is not sufficiently sweet to win public favor on its own merits. It possesses little aroma itself, but it has the power of strengthening the odor of other fragrant bodies. The celebrated "Ess. Bouquet" consists of one-third of its volume of extract of orris, as does also the equally famed "Jockey Club Bouquet." The Iris Florentina could be cultivated in several of the English colonies, more particularly the Cape of Good Hope, and that, too, with considerable profit.

Mints.

The plants included in the genus Mentha are nearly all highly aromatic, containing in their leaves a very pungent volatile oil or otto. The kinds best known are the Peppermint, Pennyroyal, and Spearmint. Of these the Peppermint is that which now most concerns us. Some of the fairest fields in Surrey—those in the neighborhood of Mitcham, Carshalton, Beddington, Sutton, and Wallington—are devoted to the growth of peppermint. Nearly all this district occupies a plateau surrounded in the distance by hills, and Haddon Marshes being in its centre, well indicate the general run of the soil, which, with plenty of sand, just suits the growth of peppermint. The plants are readily propagated by dividing the roots, which are planted one foot apart each way. This is done in April, and great care is taken to prevent weeds growing amongst them, so as to ensure a pure sample of oil. The fields are plowed up and the crop changed about every five years; little else is used in the way of manure besides the spent herb from the still-house, which is put on the land in spring, after having had about half a year to ferment and decay. Peppermint is also largely grown in North America—in Wayne county, New York; in Ohio; in St. Joseph's county, Michigan, and in Strathroy, Canada. The oil imported from these localities finds a ready sale in London, and thence it is sent to Northern Europe. In dealing with a subject of which parliamentary blue-books take no cognizance, it is difficult to fix statistically the quantity of oils obtained annually, but I should say that not less than 33,000 pounds of it are produced in Surrey alone. The best English oil has an average value of, say, 30 shillings per pound; but the American oils only realize about half that sum; a circumstance to be attributed not so much to climate or the quality of the plant itself, as to weedy cultivation. Weeds are carried into the still with the peppermint, and as many of them yield an oil, the true peppermint oil becomes deteriorated. In Surrey two varieties of peppermint are grown — technically known as white mint * and black mint.† The mint harvest, as a rule, begins about the third week in August, and all is not garnered until the end of September. During this interval

White Mint.

the stills are worked night and day without cessation, Sunday excepted. The mint is cut with a sickle or scythe, and is left to dry on the ground; it is then tied up in "mats" of, say, 56 pounds each, and taken to the still-house. About 60 mats, or over 300 pounds weight, are produced by each acre of land.

In Surrey there are about 1,200 acres under mint alone, namely, 500 acres of white and 700 acres of black mint. The white kind yields, on an average, 24 pounds of oil to the acre, say, $24 \times 500 = 12{,}000$ pounds, which, at the very low price of 30 shillings per pound, shows a value of £18,000 ($87,480). The black mint, which yields more oil than the white, averages some 30 pounds to the acre, but it has a lower market value, say 25 shillings per pound —$30 \times 700 = 21{,}000$ pounds. This gives a value of £26,250 ($127,575), or a total of £44,250 ($215,055).

These figures surely ought to induce young emigrants to some of the British colonies to commence without delay the culture of scent-yielding plants. The white mint is more susceptible of injury from the spring frosts and summer drouths than the black kind; hence, both are grown, in order to insure a crop of some sort. The operation of distilling is simple enough; it consists in boiling the herb in water, and passing the steam generated through a hollow wormed pipe placed in a vat of cold water; the oil rises with the steam, and is condensed in the worm, falling out at

* Mentha piperita officinalis.
† Mentha piperita vulgaris.

the end into a receiver; the oil floats upon the water, and is ladled off from time to time. A "charge," as it is termed, for the still consists of 20 mats of 56 pounds each, or half a ton of mint, and about 70 gallons of water. It is then boiled slowly, with a steady fire, for seven hours, at which time all the oil is out of the mint; the still is then emptied by a tap of any water remaining, and the spent mint is

Black Mint.

forked out of the alembic, an hour being allowed for this work and to effect another charge. Three charges are thus worked during the twenty-four hours, or what is equivalent to the produet of an acre of land.

ALUMNI ASSOCIATION OF THE COLLEGE OF PHARMACY OF THE CITY OF NEW YORK.

At the stated meeting of the Alumni Association of the College of Pharmacy of the City of New York, held in October, 1877, the following papers were read:

PELLITORY ROOT.

Mr. Charles G. Clark mentioned an error in the U. S. Dispensatory under the head of "Pellitory." The statement that this drug is a powerful irritant he had found to be incorrect. It seems to have only mild stimulant properties, and is considerably used in tooth-washes.

LOBELIA INFLATA.

Charles S. Plumb, M.D., pointed out the inaccuracy of the U. S. Dispensatory in regard to the statement that Lobelia root was used in medicine. The root, according to Dr. Plumb, is almost inert, and is not found in the market.

The general characteristics of the leaves, as given by authorities, is correct, except the conclusion that Lobelia is poisonous. The writer maintained the view that relaxation was the principal effect, whilst several authorities had used the term prostration to designate the symptoms following the use of Lobelia herb, which is wrong, because no stupor follows, no convulsions, no permanent debility, in fact, no symptoms of a narcotic poison are observed, as we see in those drugs properly called narcotics.

It was also stated, in contradistinction to the Dispensatory, that the drug has no cathartic properties whatever, but it produces speedy and severe vomiting, attended with continued nausea, copious sweating, and great general relaxation, as described in the Dispensatory.

The writer denounced as erroneous the statement that Lobelia in large or too frequently repeated doses produces extreme prostration and death, preceded by convulsions.

In substantiation of this latter statement he remarked that he had taken very large doses, and had seen prescribed, by several physicians, repeatedly, doses of one-half to two or three drachms, without any injurious effects following, even when the drug had been retained in the stomach.

The detailed experiments with this drug led to the conclusion that the common reputation of Lobelia was far from the truth, and that its poisonous effects had come by association with nicotina without careful analysis of its medicinal properties.

ADULTERATION OF OIL OF ORIGANUM.

J. W. Ballard (of Davenport, Iowa) stated that he was aware that pure oil of origanum is sometimes hard to find, but the specimen that came under his observation a few weeks ago was so peculiar, at least to him, that he forwarded a description:

The oil was bought for pure, labelled pure, and priced liberal. It was very light colored, and had an agreeable, though not a strong odor.

It would not mix with turpentine spirits in any proportion, but when shaken would give an opalescent mixture, and soon separate. It would burn readily, but without the dense smoke that the pure oil gives. On agitation with water three-fourths of the oil remained mixed with the water, while one-fourth appeared at the top. This layer of oil floating at the top gave all the indications of being oil of origanum. This mixed readily with spirits of turpentine, etc. From the specific gravity, color of flame, etc., Mr. Ballard concluded the mixture to be one-fourth oil of origanum and three-fourths alcohol.

A KANSAS MINERAL WATER.

Mr. Ballard also submitted a report of an examination of water from a well near Wichita, Kansas.

The water was perfectly clear and not unpleasant to the taste. On evaporating to one-half its volume no precipitate appeared.

A portion was mixed with hydrochloric acid and chloride of barium, resulting in a white precipitate, indicating sulphuric acid.

On adding chloride of ammonium, ammonia, and oxalate of ammonium, a dense white precipitate appeared, indicating lime.

The water was now freed from lime by precipitation and filtration, and ammonia and phosphate of sodium added. A white precipitate occurred, indicating magnesia. Search for the other elements failed to detect more than a mere trace; therefore the writer reported the water to contain sulphate of lime and sulphate of magnesia. On evaporating to dryness the amount of mineral matter was one hundred and twelve grains to the gallon.

The owner of the well then reported the following facts in regard to it: Water dipped from the surface of the well with a bucket (the well contained seventeen feet of water) produced no sensible effect on the system; that obtained from the bottom by a pump, if used freely as a laboring man would in the warm season, produced griping and purging. A moderate use of the water seemed to be beneficial, as the owner had formerly been troubled with bilious attacks, etc., and now enjoyed excellent health, which he attributed to the use of the water. He was formerly much troubled with constipation, but now had regular movements.

QUANTITATIVE TEST FOR CARBOLIC ACID.

Mr. A. F. Nietsch recommended the conversion of carbolic acid into sulphocarbolate by digesting equal vol-

umes of phenol and concentrated sulphuric acid until they have combined; water is added to dissolve the sulphocarbolic acid, which is filtered and treated with oxide of lead or carbonate of baryta in excess. The solution of sulphocarbolate of lead or baryta is filtered from the excess of lead or baryta, and decomposed with dilute sulphuric acid. The precipitated sulphate of baryta or lead is washed, dried, and calcined.

One hundred parts by weight of sulphate of baryta is equal to eighty; and one hundred parts by weight of sulphate of lead is equal to sixty-two parts by weight of carbolic acid, from which the percentage composition of the tested sample can be easily calculated.

THE GRANULATED WHITE SUGAR OF THE MARKET.

MR. E. W. RUNYON had found, on comparison, that the several brands of supposed A No. 1 granulated sugars of the market, produced syrups of different tints, which suggested an examination of their quality. Samples were found containing a considerable proportion of ultramarine, which, after several days' standing, was deposited. Syrups made from sugars having the ultramarine impurity are discolored, being usually of a pale straw color.

This adulteration and additions of sulphate of tin, alum, etc., are used by refiners in the interest of dollars and cents, and are designed to neutralize the yellow tint in imperfectly refined sugars. The practice is known among refiners as adding the complementary color.

Unquestionably ultramarine adulteration is chemically injurious, being decomposed by fruit or organic acids with evolution of sulphuretted hydrogen, which produces a disagreeable taste; aside from this serious objection the officinal syrups instead of being colorless and bright are tainted and dull in appearance.

Pure sugars can be had by purchasing from first-class manufacturers and paying a slight advance on the price of ordinary marketable granulated white sugar.

FORMULA FOR USE IN DIPHTHERIA.

TO THE EDITOR OF NEW REMEDIES.

SIR:—Allow me to suggest the following recipe to be used with the hand atomizer in diphtheria:

℞. Acid. salicylic ..... ℈ij.
Sodii bisulphitis..... ℈iv.
Glycerine..... ʒ iv.
Aq. flor. aurantii .....ad ℥ iv.
M.
S. A small quantity to be used hourly with the atomizer.

Respectfully yours,
F. A. BURRALL, M.D.

28 WEST 11TH ST.

Export of Drugs from Ceylon.—*The American Mail and Export Journal* gives the following figures among other statistics of exports from Ceylon since 1874:

	Cinnamon. lbs.	*Cocoanut Oil.* cwt.	*Plumbago.* cwt.	*Cinchona.* lbs.
1877.....	829,842	143,686	103,370	34,053
1876.....	1,035,483	175,936	118,618	14,548
1875.....	840,682	106,004	90,118	18,716
1874.....	891,126	107,859	147,850	

Maté as a Substitute for Tea and Coffee.—Mr. O'Conor, of the British Legation in Brazil, calls attention, in a recent official report, to yerba maté, an article largely cultivated in the province of Parana, and exported to neighboring South American countries, but hitherto not on the list of exports. He says it is more fortifying and alimentary than either tea or coffee, and much more wholesome, and can be sold at a price so moderate as to place it within the reach of all classes. He states that the Minister of Agriculture has appropriated a small sum for the purpose of making this excellent plant known in Europe.

TRADE NOTES.

George Tiemann & Co's. Hypodermic Syringe-Bottle.

(Patented Oct. 9, 1877.)

GREAT inconvenience is often experienced in filling a hypodermic syringe from the ordinary bottle, because of its narrow neck and its liability to upset.

The narrow neck prevents the insertion of the end of the syringe, or, if the syringe is screwed upon the bottle, a partial

Tiemann's Hypodermic Syringe-Bottle.

vacuum is liable to be formed, so that the piston returns when released and often some of the fluid re-enters the bottle. The liability to spill the contents of the bottle is increased by the fact that it has to be removed from the case and stood upright.

All these difficulties are overcome by the above improvement, the bottle having the mouth at a right angle to its body and made sufficiently large to admit the nozzle-end of the syringe. It need not be removed from the case for the purpose of charging the syringe. You merely turn the neck upward, remove the stopper, insert the syringe into the fluid, and draw upon the piston until the desired quantity of medicine has entered the barrel. The case is made to hold the bottle tightly in any position, so that both may be left on the table during the operation, without fearing for the safety of the glass or its contents.

After having operated and replaced the needle and syringe in the case, the bottle is corked and turned back to its former position.

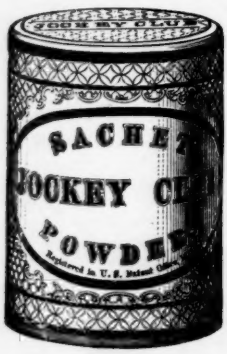
Toussaint's Extract of Malt prepared in Vacuo. MR. TOUSSAINT, who has just completed his new vacuum apparatus for the manufacture of Extract of Malt, by means of which he will be able to furnish even a better quality of this article than before, has received a well-merited distinction in the shape of a medal of merit at the exhibition of the American Institute. The new extract, which we have had occasion to examine, leaves, certainly, nothing to be desired.

Kava Kava.

WE have to thank Messrs. J. C. Allan & Co., of Buffalo, for a very handsome specimen of the root of Kava Kava, to which we have already referred as a new and remarkably successful remedy (if reports are to be credited) for gonorrhœa. Messrs. Allan & Co. have imported on their own account a quantity of the drug, which they guarantee to be genuine, and are prepared to supply orders. The sample received presents all the botanical characteristics referred to on page 68.

Metcalfe's Sachet Powders.

THERE are few trifles which give such lasting pleasure in the way of holiday presents as sachets, and we take pleasure in recommending the powders prepared in great variety by Theodore Metcalfe & Co., of Boston, for the salable appearance of their packages and the delicacy of flavor of the contents. The former is shown in the adjoining cut, and consists of paper-covered tin boxes of two sizes, holding respectively one ounce and half a pound.



The price of the powders is $4.00 per dozen (ounces), with a discount according to quantity, or $4.00 per pound, with discount.

ANALYSES OF PHARMACEUTICAL CHEMICALS AND PREPARATIONS.

We are now prepared to send samples for the February prize to such as may desire to compete for it. Answers must be received before the 20th of January, and be accompanied by a sealed envelope containing the name of the writer, and designated by a device or motto, which is also to be placed, instead of the writer's name, upon the report of the analysis.

Persons to whom a prize has been awarded are requested to send to the publishers the title of any book or books they may desire, not exceeding in the aggregate the value of $10.00.

The prize this month will be awarded to E. B. STUART *("Veritas"), of Chicago, Ill.*

The December sample contained bismuth subnitrate ninety-eight per cent., lead nitrate one per cent., and arsenic acid one per cent. The subnitrate was impure from the presence of a small amount of bismuth oxychloride (BiOCl) and a trace of iron.

It may be profitable to study the U. S. P. process for the preparation of "Bismuthi Subnitras," that we may see just how the Pharmacopœia provides for the prevention of impurities. "Commercial bismuth of good quality" is the specified material; it "usually contains a small proportion of arsenic, copper, and silver" (U. S. P.); lead, also, is not an infrequent impurity.

1. Bismuth is dissolved in nitric acid diluted with about an equal bulk of water: formation of $Bi(NO_3)_3$, also there may be present some H_3AsO_4 and nitrates of lead, silver, and copper.

2. The solution is diluted with a moderate amount of water and allowed to stand twenty-four hours. Most of the H_3AsO_4 separates as a basic arseniate of Bismuth ($Bi_3O_3AsO_4$), which is removed by filtration.

3. The solution is now precipitated by Na_2CO_3; the precipitate contains $Bi_2O_3CO_2$ (subcarbonate), Ag_2CO_3, and basic carbonates of Pb and Cu. The filtrate, which is rejected, contains the remaining arsenic acid as soluble sodic arseniate (Na_2HAsO_4).

4. The precipitate is dissolved in nitric acid, forming nitrates of bismuth, copper, silver, and lead. This solution is slightly diluted, and set aside twenty-four hours to allow any *traces* of arsenic to precipitate, as explained in 2.

5. To the clear solution is added sufficient water of ammonia (10 per cent. NH_3) to precipitate $BiONO_3$—: thus,

$$Bi(NO_3)_3 + 2NH_4OH = BiONO_3 + 2NH_4NO_3 + H_2O.$$

If too much, or too strong ammonia is used, the precipitate consists, wholly or in part, of $Bi(OH)_3$.

This precipitate may contain a little basic lead hydrate. Copper and silver are held in solution, as double salts, by the ammonium nitrate present; probably some of the lead is also thus prevented from precipitating.

If the above process is strictly followed, the subnitrate will be of sufficient purity for medicinal use. Manufacturers prepare the salt more easily by pouring the nitrate into much water, whereby the subnitrate is precipitated:

$$Bi(NO_3)_3 + H_2O = BiONO_3 + 2HNO_3.$$

The solution still contains a little bismuth, which sometimes is precipitated by strong solution of common salt as oxychloride (BiOCl). As thus prepared, the subnitrate often contains more than *traces* of the impurities named; the sample fairly represents such a preparation.

The detection of arsenic, and more particularly lead, when present with much bismuth, is a rather difficult matter. Only the direct tests can be given in this article for want of space.

(*a*) Arsenic may be detected, by Marsh's test, as follows: place in a long test-tube some of the suspected substance, pour over it a little *pure* diluted sulphuric acid (one measure of acid to ten or twelve of water), and then add a few pieces of *pure* zinc. If the action is too slow, drop in a bit of platinum foil or wire, or better, a drop of platinic chloride solution.

Notice odor of the evolved gas; any considerable amount of arsenic imparts an odor of garlic. This gas (AsH_3) is *very poisonous*, and should be carefully manipulated with.

As zinc and sulphuric acid both are liable to contain arsenic, they should be tested as follows: Place the zinc and diluted acid in a test-tube, and pass the evolved gas into solution of silver nitrate; no blackening of the silver solution should occur in ten minutes: if blackening occurs, reject both the zinc and the acid, or find which is impure and reject it.

Close the tube by a well-fitted cork through which passes a bent glass tube. After the gas has expelled the air in the tube, light it. If the flame has a red color, but little, if any, arsenic is present; if a pale blue color, arsenic is probably present.

Hold the flame directly against a cold porcelain surface. If spots are formed, they may be arsenic, or antimony, or both. Apply reagents to these spots to determine which they are. (Consult text-books.) Extinguish the flame, and heat the glass tube to redness at a point about midway between the angle and the open end. If a dark-colored mirror is formed, it may be an arsenic or an antimony mirror. Arsenic is deposited near the open end of the tube, while the antimony mirror forms near the flame, sometimes on both sides of it. The separation of arsenic from arsenietted hydrogen by burning may be explained by the following equation:

$$4AsH_3 + 3O_2 = As_4 + 6H_2O.$$

Next, pass the gas into a slightly acid solution of silver nitrate; if arsenic is present, a black precipitate of metallic silver will be produced.

$$12AgNO_3 + 2AsH_3 + 3H_2O = 3Ag_2 + As_2O_3 + 12HNO_3.$$

If antimony is also present, a part of the black precipitate will be antimonide of silver (Ag_3Sb).

$$3AgNO_3 + SbH_3 = Ag_3Sb + 3HNO_3.$$

The arsenic will now be in solution with excess of silver nitrate, while any antimony will be in the black precipitate (p).

To the clear filtrate add a slight excess of hydrochloric acid, to remove silver, and filter. This filtrate contains arsenious oxide (As_2O_3) and excess of hydrochloric acid. It may be tested by H_2S and other appropriate reagents.

The black precipitate (p) may be treated with warm dilute hydrochloric acid, whereby the antimony is dissolved as $SbCl_3$, and the silver remains as insoluble AgCl. Filter and test the filtrate for antimony.

(*b*) The detection of lead in presence of much bismuth is rather more difficult than the detection of arsenic. The following method gives the best results. Dissolve 10 to 30 grains of the salt in dilute nitric acid, concentrate the solution, and pour into water; by this treatment most of the bismuth is removed as $BiONO_3$, while the lead remains in solution as $Pb(NO_3)_2$, with some bismuth and excess of nitric acid. Filter, and evaporate the filtrate to dryness at a *gentle* heat, so as to expel excess of nitric acid. Treat the residue with hot water, remove by filtration any bismuth subnitrate, concentrate the filtrate, and add a few drops of dilute sulphuric acid (one measure of acid to twenty of water). If only a trace of lead is present, it may require twenty-four hours for the $PbSO_4$ to make its appearance; but, if the above directions are carefully followed, failure is out of the question. Some of the contestants evidently lost the lead in the "second group," when dissolving the sulphides in nitric acid. If the nitric acid is too strong, more or less PbS will be changed to insoluble $PbSO_4$, and remain on the filter, thus:

$$3PbS + 8HNO_3 = 3PbSO_4 + 8NO + 4H_2O.$$

If the nitric acid is more dilute, lead nitrate and sulphur are the products:

$$6PbS + 16HNO_3 = 6Pb(NO_3)_2 + 3S_2 + 4NO + 8H_2O.$$

"*Bon Homme.*"—You gave no tests for acetic acid or calomel: they were not present in the sample.

"*Graphic,*" "*Joe,*" *and* "*Semper Idem.*"—Your evidence for calcium and magnesium phosphates was not conclusive; if said phosphates were present, a white precipitate would certainly form in presence of citric acid, but barium and strontium phosphates would act in exactly the same way, as would also an acid (HCl) solution of calcium oxalate. It is not safe to report a base or an acid for which a definite distinctive test has not been obtained.

"*Eucalyptus,*" "*Veritas,*" *and* "*Graphic.*"—Your traces of calcium, magnesium, and sulphuric acid come probably from your filter paper, or from water used in rinsing test-tubes and beakers.

The answers received this month were unusually good: the prize has been awarded to "Veritas."

Next in order of merit are the analyses of "Eucalyptus," "Bob Sawyer," and "Light."

The January sample contains one or more organic substances of the materia medica list. They can be identified by chemical tests.

Opium in China.—The Emperor of China has issued another edict against opium. Smoking opium, especially by officials, scholars, and in the army, is to be forbidden throughout the country; the prohibition to come into effect in three years' time. Generals, governor-generals, and the governors of the various provinces, will, meanwhile, consider and draw up local regulations for giving effect to the order. It is said that the Chinese Envoys in London have persuaded the Imperial Government to take this step.

New Kind of Glass.—Mr. Sidot, of Nancy, is the discoverer of a new kind of glass, which is prepared by heating acid calcium phosphate to a white heat. It may be cast like ordinary glass, and may therefore be used for the manufacture of lenses, prisms, eye-glasses, etc. It can also be used as an enamel for crucibles and other earthen vessels. Hydrofluoric acid does not attack it.

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue.*]

Oenokrine (F. B. W., ————).—This is a reagent-paper, originally prepared in Paris, which was found by Dr. Herman Hager to be merely blotting-paper saturated with lead acetate. It is used to detect certain color-sophistications in wines: in presence of fuchsin, the paper assumes a fine red color, with logwood or hollyhock flowers it turns fine blue, etc.; but the coloring matter of bilberries and that of natural red wine, produce the same reaction, namely a grayish-blue color.

Colorless Tincture of Iodine (U., Kankakee City, Ill.).—A mixture of tincture of iodine and carbolic acid will gradually produce tri-iodophenol, which is soluble in the alcohol. Hence the disappearance of color. The ingredients generally used are:

Compound tincture of iodine	45 min.
Carbolic acid	6 min.
Glycerine	fl. ʒ 1.
Water	fl. ʒ 5.

Mix. This is sometimes yclept carbolate of iodine. The color disappears in from eight hours to ten days.

Gutta Percha Cement (E. E., Lisbon Falls, Me.).—This correspondent wants the formula of a solution of gutta percha in carbon disulphide (bisulphide of carbon), or benzole, from which the latter does not evaporate. This is rather a difficult matter. We can only suggest the following: 1. Either keep your cement in very small vials, tightly closed, so as to open only one at a time. 2. Keep your cement in a vial or bottle with an orifice at the bottom; or in a globe-funnel, and pour on top of it water, which will protect it from evaporating. The formula for preparing the cement is very simple, and consists in dissolving one part of gutta percha in from six to twelve parts of carbon disulphide, according to the consistence desired.

Sultana-Raisins (C. C., Irving, Kans.).—This species of raisin is distinguished by being devoid of kernels. It is the dried fruit of a variety of grape, called *Tseker-de-Ksis*, ("without kernel") growing in Anatolia, and exported generally from Smyrna. Of late years the demand for this kind of raisins has been greatly increased, and large districts have commenced its cultivation. Persia has also furnished considerable quantities during the last two years, which were shipped to England by way of Suez; and the attempts to cultivate it in Greece and the Ionian Islands are likewise said to have been very successful.

Salts of Gold (W. H. G., Zanesville, O.).—Photographers are in the habit sometimes of using this expression for chloride of gold alone, or for chloride of gold and sodium.

Divi-Divi (same).—Divi-divi, or Dividibi, or Libidivi, or Libidavi, are the fruits of *Cæsalpinia coriaria* Willd., forming twisted or S-shaped, dry, brittle, shining, chestnut-brown pods, containing between the external and internal shell a brittle ochre-colored mass. This is rich in tannin, containing between nineteen and forty-nine per cent. They were first brought to Europe by the Spaniards in 1768. At present they are exported from Caracas, Maracaibo and Curaçao, and are used for tannin, and dyeing of leather.

St. John's Bread (the same).—The pod of Ceratonia Siliqua L., the Carob tree, used as food in Africa and East Indies, and warm countries of Europe. They are much used by singers as a supposed means to improve the voice.

Colored Fires (R. A. P., San Francisco, Cal.).—All colored flames increase in brightness with the rapidity of combustion; but the substances which impart the color do not all bear an equally high temperature. It is therefore necessary to properly apportion the quantity of potassium chlorate or nitrate, and of charcoal, so as to produce the exact degree of temperature at which the colored vapor is best given off. Barium nitrate requires a considerably high heat to give out a handsome bluish-green flame. Hence, charcoal cannot be used, and the quantity of potassium chlorate must be increased. Strontium gives a fine red only at low temperatures; hence, the presence of charcoal and diminution of potassium chlorate become necessary. The same is the case with the yellow flame produced by sodium nitrate. Cupric oxide and sulphate produce a handsome blue only at high temperatures; at a lower degree of heat, the flame is apt to be violet. It is always best to arrange the latter flame so that it is not seen itself, but only its reflection. According as it is desired to have a rapid flame or a more quietly-burning light, the following mixtures will be found best suited for the purpose.

CAUTION: The potassium chlorate, previously powdered and sifted by itself, must, under all circumstances, be added to the mixture last. It must not be rubbed up with any other body, but must be carefully and gradually mixed in portions with a portion of the other mixture, best by means of a wooden spatula. Never use any flowers of sulphur, which always contain sulphuric acid, but only pure washed sulphur. Lastly, never make any colored fires, except you are sure, that you have taken all possible precautions not to blow up anybody but yourself!

		Flame.	Light.
GREEN:	Barium nitrate.....parts.	15	12
	Sulphur.....	7	6.5
	Black sulphuret of antimony..	0	0.3
	Potassium chlorate.....	8	11.4
		30	30
RED:	Strontium nitrate.....	20	17.2
	Sulphur.....	6.5	5.4
	Charcoal.....	1	1
	Black sulphuret of antimony..	0	2.1
	Potassium chlorate	2.5	4.5
		30	30.2 (pack loosely!)
YELLOW:	Sodium nitrate.....	20	21.4
	Sulphur.....	5	5
	Charcoal.....	1	0
	Black sulphuret of antimony..	1	2.2
	Soot or fine lamp-black.....	0	1.4
		27	30
WHITE:	Potassium nitrate.....	21	20
	Sulphur.....	7	5
	Black sulphuret of antimony..	2	5
		30	30

BLUE:					
	Oxide of copper.....	5		3	6
	Sulphur.....	5		7	10
	Sodium nitrate.....	0	or	12	6
	Calomel.....	2		0	0
	Potassium chlorate..	8		9	18
		20		31	40

Prescription (W. H. G.)—The word 'Teranturet,' in the remarkable but unpublishable prescription you sent us, is most likely a mistake of your own. The original probably read: "Bene terantur et adde," "they shall be well rubbed up; and add, etc."

Inulin (N. I., Hamilton, Ky.).—This is a variety of starch, occupying a place between true starch and sugar. It occurs only in plants belonging to the group Synantheræ of the Composite Family, and perhaps a few closely related plants, being contained in the subterranean portions of more than one year's growth. It is found in the parenchyma of the bark, and the medullary rays; never, however, in grains, but always in solution. It was first discovered by Val. Rose in the root of *Inula Helenium* L., whence the name. It has also been called Helenin Alantin, and Dahlin. Inulin is not colored blue by iodine. It dissolves in about three parts of boiling water, forming a clear, thin fluid solution, which deposits nearly all the inulin on cooling. See *Dragendorff, Materialien zu einer Monographie des Inulins*, 8vo, St. Petersburg, 1870.

Phtalic or Phthalic (W. H., New York).—You are quite correct in pointing out that this word and some others containing the compound "ph-th" should not be spelled with "ph-t." We have to say, however, that custom has a great influence on technical terms, and we believe you will more frequently find the spelling phtalic than phthalic.

Lip-Salve (Arth. and W. J., Jefferson City, Mo.).—The following has lately been recommended: White wax, 1 drachm; Oil of almonds (sweet), 1½ ounces; Conc. oil of rose (Allchin's), 3 drachms. Melt, and when nearly cold, add six drops of otto of roses.

Syrup of Bromide of Zinc (R. G., Toledo, Ohio).—This is a preparation recommended in epilepsy by Dr. Wm. A. Hammond, of this city, and consists of bromide of zinc, ℥ i., simple syrup, ℥ iv.—mix; of which the dose is ten drops three times daily, gradually increased, if necessary, to fifty, sixty, or even more in some cases.

Correction.—The item on page 349 of the foregoing number, headed "Removing Iodine Stains," should have read instead, Removing Nitrate of Silver Stains.

PRESCRIPTIONS AND FORMULÆ.

Ergotine for Hypodermic Injections.—M. Moutard Martin gives the following formula for hypodermic injections in metrorrhagia:

Ergotine (de Bonjean)..... 2 grammes.
Glycerine,
Water.....aa. 15 "
M.

Quinia Solution for Hypodermic Use.—MR. FR. UERLEIA, referring to the formulæ of the above nature, published on page 351, writes to us that the muriate of quinia is soluble in 15 parts of water, and does not cause inflammation when properly injected. He considers it as in all respects the best form of the alkaloid to be used for this purpose.

Gelatine Varnish.—A writer in *Anthony's Photographic Bulletin* recommends for a variety of purposes, a thin solution of gelatine, to which a few drops of a saturated solution of bichromate of potassium or ammonium have been added. After which the mixture requires to be well shaken. He says: "Cover a negative with the solution, dry and expose to the sun, and it makes the finest surface to retouch upon I have ever tried. The pencil-marks can be easily erased, if needed. As a varnish for photographs, pencil drawings, etc., it has no equal. . . . It renders vessels perfectly water-tight, such as wooden baths, dishes, etc. One or two coats, dried and exposed to the sun, are all that are necessary, as the film is not soluble in water, either hot or cold. I have also applied the solution for the preservation of fruit, eggs, etc. It can be applied to a thousand uses not now thought of."

Removal of Stains.

THE following notes appeared some time ago in the *Apothek. Zeitung*. The stains easiest to remove are those of sugar, gelatin, blood, and albumen; a simple washing with water is all that is necessary for all kinds of fabrics.

GREASE SPOTS.

For *white linen or cotton* goods, use soap or weak lye.
For *colored calicoes*, warm soap-suds.
For *woollens*, soap-suds or ammonia.
For *silks*, benzine, ether, ammonia, magnesia, chalk, yolk of egg, with water.

PAINT, VARNISH, AND RESIN STAINS.

For *white or colored cotton and woollen* goods, oil of turpentine or benzine, followed by soap-suds.
For *silk*, benzine, ether, soap; hard rubbing is to be avoided.
[For all kinds of fabrics *chloroform* is best.]

STEARIN, SPERM CANDLES.

For all kinds, use 95 per cent. alcohol.

WINE AND FRUIT STAINS.

White cotton or linen. Fumes of burning sulphur, warm chlorine water.
Colored cottons or woollens. Wash with tepid soap-suds or ammonia.
Silks. The same, with very gentle rubbing.

ALIZARINE INK.

White cottons and linens. Tartaric acid in solution; the older the stain, the more concentrated the solution should be.
Colored cottons and woollens and silks. A weak solution of tartaric acid, if the color allows of its use.

RUST, NUTGALL INK.

White cottons and linens. Warm solution of oxalic acid, dilute muriatic acid, followed by granulated tin.
Colored cottons and woollens. Repeated washings with a solution of citric acid, if the color is fast.
Silks. Do nothing; all attempts only make things worse.

LIME, LYE, ALKALIES.

White cottons and linens. Wash with cold water.
Colored goods and silks. A weak solution of citric acid applied with the tip of the finger to the spot previously moistened with water.

ACIDS, VINEGAR, ORANGE JUICE, ETC.

White cottons and linens. Wash with pure water, or warm chlorine water.
Colored goods or silks. Ammonia, diluted according to the fineness of the tissue and the delicacy of the color.

TANNIN, WALNUT SHELLS.

White cottons and linens. Javelle Water (Liquor sodæ chlorinatæ), warm chlorine water, concentrated solution of tartaric acid.
Colored goods or silks. Chlorine water, diluted according to the tissue and its color, each application to be followed by washing with water.

TAR, AXLE-GREASE.

White cottons and linens. Soap, oil of turpentine, and water, each applied in turns.
Colored cottons and woollens. First, smear with lard, rub with soap and water, and let it stand for a short time; then wash with oil of turpentine and water, alternately.
Silks. The same, using benzine instead of turpentine, and dropping the water from a certain height on the under side of the stain. Avoid rubbing.

A Kerosene Liniment, which is recommended very highly by Dr. A. G. Hobbs, of Indiana, is composed as follows:

℞. Ol. petrolii	℥ ij.
Tinct. opii	ʒ iv.
Tinct. arnicæ	ʒ v.
Tinct. stramonii	ʒ iv.
Spts. ammon. aromat.	ʒ vi.
Spts. camphoræ	ʒ v.
Ol. origani	ʒ iv.
Chloroformi	ʒ iij.

M.

To be well rubbed in twice in twenty-four hours, or p. r. n.

Improved Carmine Ink for Draughtsmen.—The solubility of carmine lake in caustic aqua ammonia is attended with this disadvantage: that, in consequence of the alkaline properties of ammonia, the cochineal pigment will in time form a basic compound, which, in contact with a steel pen, no longer produces an intense red, but rather a blackish color. To avoid this evil, the *Polytech. Notizblatt* recommends the following:—Triturate one gramme of pure carmine with fifteen grammes of acetate of ammonia solution, and an equal quantity of distilled water in a porcelain mortar, and allow the whole to stand for some time. In this way, a portion of the alumina, which is combined with the carmine dye, is taken up by the acetic acid of the ammonia salt, and separates as a precipitate, while the pure pigment of the cochineal remains dissolved in the half-saturated ammonia. It is now filtered, and a few drops of pure white sugar syrup added to thicken it. A solution of gum arabic cannot be used to thicken it, since the ink still contains some acetic acid, which would coagulate the bassorine, one of the constituents of the gum.

Correction.—We have a note from Dr. N. N. Davis, of Chicago, calling attention to the fact that the prescription published on page 351 of our last number, and consisting of hydrochlorate of ammonium, tinctures of stramonium and cimicifuga, and syrup of liquorice, should read ʒ iij. instead of ℥ iij. of the first ingredient. The error occurred in the source from which we obtained the formula.

ITEMS.

The Therapeutical Society.—This newly-organized society, to which we referred on page 290, differs from most medical organizations in that the holding of the meetings will form but a small and subordinate part of its plan. It is designed that each member shall be doing work for the Society in his daily rounds of practice. To this end precise and definite points in relation to the action of selected remedies, under specified conditions, will be given out, and the members will be expected to employ every opportunity, which their practice affords, to accumulate accurate observations upon these points. The meetings will be merely for the purpose of bringing these observations before the Society, and for laying out new work, both of which will be done through the agency of committees. The following extract from its by-laws is published as an illustration of its method of working:

"The work of the Society shall be prepared by committees, or bureaus, of which a number shall be created, each one intrusted with the study of a group of remedies; as, for example, a Committee on Antipyretics, one on Neurotics, one on Surgical Appliances, etc.

"New committees shall be formed at the request of any three members.

"Members may elect with which committee or committees they will serve.

"Each committee shall have its own organization.

"All communications shall be referred to the proper committee, or, in cases of great importance or urgency, to a special committee appointed by the President.

"The Council shall determine what committee or committees shall occupy the time of a meeting, and the committee shall assign parts to its members.

"Each committee having an evening or part of an evening assigned to it, shall prepare a written report of its observations and conclusions, which, after being laid before the Society, shall be given to the Secretary for publication.

"Any member may submit a written statement of his experimental or clinical use of a remedy to the appropriate committee, and thereby become temporarily a member of said committee.

"Any committee may invite the attention of the Society at large to any point relating to its own branch, and call for observations upon such point."

The meetings will be held on the second Friday of February, April, June, October, and December. Dr. James R. Leaming (160 W. 23d Street) has been elected President, and Dr. E. C. Seguin (41 W. 20th Street), Corresponding Secretary.

Alumni Association of the College of Pharmacy of the City of New York.—The next regular meeting of this Association will be held on Thursday, January 10, 1878, at 8 P.M., at the College rooms. A full attendance of the Executive Board is desired by the President, as business is pending which will require their personal consideration. The meeting held in October last was a pronounced success, and a number of very creditable scientific papers were read by members. (See page 366.) We sincerely hope that the members will not discontinue their efforts to make the meetings entertaining and instructive.

H. L. COIT, Secretary.

The Maine State Pharmaceutical Association met at Portland on the 16th of October.

The old officers were re-elected, and thirty-five new members enrolled. The Committee on Legislation suggested a change of the law, so that a certificate of registration shall only cover the business of one shop; making a revocation of certificates possible after convictions for infraction of laws; giving registered apothecaries the right to furnish spirits for medicinal uses, etc.

Interesting discussions occurred on various points during the session. All the members showed a lively interest in the welfare of the society and the improvement of the standing and education of apothecaries in the State.

The time of the annual meeting was changed from October to August, and the intention is to make this in future a general good time for the members of the drug trade throughout the State.

The "Pharmacy" of the Old Hôtel-Dieu.—A recent writer from Paris, speaking of the old Hôtel-Dieu, which is undergoing demolition, refers to the "cagnards," one of the most curious and, at the same time, least-known portions of this historical edifice. The cagnards are the rooms built under the water terrace and above the cellars. In the reign of Henry IV. (that is, at the beginning of the seventeenth century), all but one of these rooms were destroyed, and it has since been occupied as the pharmacy of the establishment. None of the shine and elegance of more modern establishments were to be seen. The roof was vaulted, the counters, the seats, and other accessories were in solid oak, blackened with age and polished by continual friction. Instead of colored bottles, earthenware and pewter jars of the strangest forms lined the shelves, reminding one of the days of Molière's apothecaries, or the dear old Speziaria of the once-existing Italian convents. The bronze mortar in use dated from the reign of Louis XIII. (1610–1643), and the set of brass weights were of no mean antiquity.

M. Ritter, Professor of Medical Chemistry and Toxicology in the Medical School of Nancy, has been appointed Director of the Clinical Laboratory.

The Eucalyptus in Algeria. Consul-General Playfair writes: "Formerly it was impossible for the workmen at the great iron mines of Mokta-el-Hadid to remain there during the summer; those who attempted to do so died, and the company was obliged to take the laborers to and from the mines every morning and evening, 33 kilos each way. From 1868 to 1870 the company planted more than 100,000 Eucalyptus trees, and now the workmen are able to live all the year through at the scene of their labors.

Another Mrs. Partington. A lady quite well known in Philadelphia, who spent the summer at Newport this year, asked her physician (also a well-known Philadelphian), if he did not think the atmosphere of Newport enervating? The physician assured her that his opinion was quite the contrary, that he considered it decidedly tonic. "Do you, really?" was her rejoinder. "It seems to me as if there is not enough *sozodont* in the atmosphere!"

M. Mandon, Adjunct Professor of Therapeutics in the Medical School of Limoges, has been appointed Professor.

Poisonous Tin Ware.—During a recent inspection of tinned ware, by order of the Council of Hygiene and Salubrity of Paris, it was discovered that a great number of tinners used a compound containing a considerable proportion of lead, instead of pure tin, for tinning kitchen utensils.

Professor Sidney A. Norton has accepted the chair of Chemistry in the Starling Medical College, Columbus, Ohio, recently vacated by Professor Wormley.

Druggists' and Chemists' Glassware.—The manufacture of these wares in the United States is confined to a few establishments, most of which are to be found in New Jersey; the exceptions being in Pittsburgh and on Long Island. It is said that in this special line of glassware no fewer than 60,000 molds, and a dozen different qualities of glass, are employed.

Production of Manganese in Louisiana.—The New Orleans *Times* says: "The manganese mines, near Cave Spring, are being worked with fair success. The company have their mines in full blast, and about sixteen tons per day of twenty-four hours are being extracted. The quality of the ore is seventy-six per cent. of peroxide of manganese."

Glass Bottles from Furnace Slag.—It has been proved by actual experiment that good bottles can be made from blast-furnace slag, and extensive works are now in process of erection at Finedon, in Northamptonshire, where, in a few months, "Britten's Patent Glass Company" will be producing large quantities of glass bottles from that unpromising and hitherto useless material.

The American Export of Petroleum has increased wonderfully within the last four years, until, to-day, there is scarcely a civilized spot on the face of the globe to which this cheapest of all illuminators is not shipped. The wells of Pennsylvania and West Virginia have yielded in all about 80,000,000 barrels, which has a value of nearly four hundred million dollars at the seaboard.

Error in the U. S. Dispensatory.—A very serious error occurs in the last (14th) edition of the U. S. Dispensatory, under the head of *Liquor Barii Chloridi*, where the dose is given as 50 drops, corresponding to about 16 grains of the salt. It should be 5 *drops*.

The Last of the "Pharmacographias."—Let those who have been so fortunate as to secure a copy of this noble work duly prize their possession, for this is what the *Chemist and Druggist* of October 15th says regarding it: "The copy of Hanbury's 'Pharmacographia,' which we gave to the winner of our botanical contest last month, was, we are informed, the last in the hands of the publishers, and it also appears to be very unlikely that a new edition will be reproduced."

Balata is the name of a product resembling caoutchouc or gutta-percha, occupying a rank in usefulness between these, and is already in great demand in Europe for manufacturing purposes. It is derived from the South American "Bully-tree," Chrysophyllum Cainito.

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